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*Ra* TAKING INVENTORY OF OUR BASIC NATIONAL RESOURCES AT THE SOIL

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A radio talk by Dr. Henry G. Knight, chief, Bureau of Chemistry and Soils, delivered Friday, November 26, 1932, in the Department of Agriculture period, National Farm and Home Hour, broadcast by a network of 48 associate NBC radio stations.

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SALISBURY:

Now, right on schedule, Dr. Henry G. Knight returns to the microphone to continue his report to the Farm and Home audience on the work of the scientists in the Bureau of Chemistry and Soils. Dr. Knight has told us of the recent results of research work of the chemists on a variety of crops and forest products ranging from apples to tanning materials. Now he turns to the work of the soil scientists, and he starts this series of reports with an explanation of the work of the Federal Soil Survey and pointers to individual farmers who may wish to make use of this service. Ladies and gentleman, Dr. Knight.

KNIGHT:

Thank you, Salisbury.

Friends of the Farm and Home Hour audience, I want to talk with you about the usefulness of soil survey work to the nation as a whole before I discuss its use by individual farmers and other people.

You and I and everybody interested in the welfare of agriculture have been discussing at length the development of a national program of land use. The national soil survey certainly is essential to making up such a program.

Here is the situation. We now have about 350 million acres of land in harvested crops. Probably 100 million acres of this are not well suited to crop farming and would be more productive as grazing lands, forests, or for recreation. Now if we could determine which of the lands come in the 100 million acres not so well suited to crop farming we would have a start toward a national program of land use.

The soil survey maps and reports give us information of this type about more than half of the agricultural area of the country. The soil survey reports also have classified other lands of lesser importance as to their general adaptability for forestry, grazing, etc.

Now certainly these maps and reports are going to be most valuable to the development of the national program of land use. They already have been of use in practical phases of land utilization. Here is an example: Soil surveys have enabled men looking for land to grow special crops, such as citrus, in the West and the South to avoid sections where the soil wasn't suited to the crop. Soil surveys have enabled farmers and government officers developing reclamation projects to avoid costly mistakes that would result from carrying water to land not suited to farming. Our bureau has been cooperating with the Bureau of Reclamation for years in classifying soils on irrigation projects to avoid just such mistakes. Had our surveys been available earlier, the government would have been saved millions of dollars, according to the report of a committee which some years ago investigated irrigation projects.

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Of course, the soil surveys give information useful for other than agricultural purposes. Here's one of a dozen instances I could cite: The Navy Department uses soil surveys in passing on the character of surfacing materials for use on aeroplane landing fields.

But returning to the agricultural uses of the surveys, let me tell you of a few recent instances in which they provided immediate help to farmers and farm communities.

When the boll weevil invaded the South and put many farmers under the necessity of readjusting their crop systems, the surveys gave the information that enabled many a man to shift from cotton to another crop suited to his soil. The facts revealed about the soil on each farm in the tobacco growing districts enable farmers to choose the fields best adapted to production of quality tobacco. This information has been worth hundreds of thousands of dollars to the tobacco growers of the East and South.

Recently a large section of the Middle West has been benefited by the scientific knowledge of soils for which the soil survey supplied the basis. In seven of the 18 States in which sugar beets are grown our soil fertility specialists carried on experiments which showed that increased yields of three tons of sugar beets could be secured from the application of a small amount of phosphatic fertilizer. This light and inexpensive application of fertilizer is being widely practiced throughout the western sugar beet growing territory as a result of the information derived from soil survey and soil fertility work. At a conservative estimate this one piece of work has increased the value of the sugar beet crop by 4 or 5 million dollars annually.

During the past year, a soil survey of the principal sugar cane areas of Louisiana was completed and specialists from our bureau are engaged in determining the kinds and amounts of fertilizers which are most effective on the more important sugarcane soils. This information is fundamental to cutting the costs of producing sugar cane.

In a certain county in western North Dakota, the citizens determined to apply facts to solving the farm taxation problem. They decided that a new land valuation program was necessary. And they decided that they had to have precise knowledge of the soils of the county before they could classify. Well, they have called in the soil survey to make the classification.

With the facts contributed by the survey, the county officials will have more definite information about each farm than they have ever possessed before. The soil survey will give basic facts to the tax officials, so that they will be able to make much closer estimates than ever before of the amount of roads, schools, and other civic improvements the county can support.

Other North Dakota counties and counties in other States have asked for similar surveys. I think we can safely say that this work of the soil survey in supplying a fair and understandable basis upon which to adjust the farmers' local taxes will become of increasing benefit to many counties and States.

Well, so much for some instances of how whole farm industries or local governments are making use of the facts gathered by the soil survey. Individuals are also making use of it. Recently one of the soil scientists out on a survey in the Middle West met a farmer who said he wished he had made more use of soil

survey information. This farmer told the soil surveyor this story,

"Some years ago I bought this farm. I had been on a good farm in another county. The soil there looked like the soil on this farm; and much the same kinds of crops were grown on the two farms. This location, the improvements, and the price were satisfactory, and I just supposed the soil was about the same as the good soil I had farmed for years in the adjoining county.

"But since I moved here I have found out a good many things about the soil of this place. I have found that I can't plow this land if it is dry; I can't cultivate it when it is wet; the hill sides wash pretty badly; and clover doesn't do so well as on the lighter soils. By giving the soil the best management I know how to give it, and watching everything carefully, I can produce good crops. But it isn't the kind of land I thought I was buying."

Now that man told the soil surveyor he was convinced that in the selection of a farm home a soil map is almost indispensable.

Well, as I have said there are now available soil survey maps and reports on more than half of the agricultural land of the United States. Most of the land that has been surveyed lies in the Southeast, the South, and the Corn Belt. The soil survey maintains a crew of 50 to 60 scientists in the field and is classifying land at the rate of about 15 million acres a year. The soil surveyors work the year around, surveying land in the Southern States in the winter and going North in the summer. The order in which the surveys are made in the different regions is left almost entirely to the decision of the States. They cooperate with the Federal government and share in the expense. In the past fiscal year the survey mapped and described in detail 28,530 square miles of territory in 30 States, Puerto Rico and the Virgin Islands. It also made reconnaissance surveys covering another 14,000 square miles in Minnesota, Montana, Oklahoma, and Vermont.

Part of the soils in every State in the Union have been surveyed, and all of the soils in four States -- Delaware, Maryland, New Jersey, and Rhode Island -- have been surveyed and mapped.

Now here is the way you go about getting a map and a report on the soils of your farm. Write to the Bureau of Chemistry and Soils to find out whether your county has been surveyed. If it has and the supply has not been exhausted you will be supplied. If your county has not been surveyed we shall, of course, advise you.

Now, until December 9, I bid you goodbye.

